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SEQUENCE LISTING

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<120> METHODS OF TREATMENT OF TYPE 2 DIABETES

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<211> 544
<212> PRT
<213> Human

<400> 4
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 35 40 45
 Ile Cys Ala Thr Pro Arg Leu Phe Pro Asp Asp Pro Arg Glu Gly Gln
 50 55 60
 Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe Leu Cys Ala Cys Ala
 65 70 75 80
 Ala Leu Gln Lys Ser Arg His Leu Leu Asp Gln Val Ile Pro Pro Gly
 85 90 95
 Gln Pro Ser Trp Ala Asp Gln Glu Tyr Arg Gly Ser Phe Thr Cys Arg
 100 105 110
 Ile Trp Gln Phe Gly Arg Trp Val Glu Val Thr Thr Asp Asp Arg Leu
 115 120 125
 Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg Cys Gln Arg Glu Asp
 130 135 140
 Val Phe Trp Leu Pro Leu Leu Glu Lys Val Tyr Ala Lys Val His Gly
 145 150 155 160
 Ser Tyr Glu His Leu Trp Ala Gly Gln Val Ala Asp Ala Leu Val Asp
 165 170 175
 Leu Thr Gly Gly Leu Ala Glu Arg Trp Asn Leu Lys Gly Val Ala Gly
 180 185 190
 Ser Gly Gly Gln Gln Asp Arg Pro Gly Arg Trp Glu His Arg Thr Cys
 195 200 205
 Arg Gln Leu Leu His Leu Lys Asp Gln Cys Leu Ile Ser Cys Cys Val
 210 215 220
 Leu Ser Pro Arg Ala Gly Ala Arg Glu Leu Gly Glu Phe His Ala Phe
 225 230 235 240
 Ile Val Ser Asp Leu Arg Glu Leu Gln Gly Gln Ala Gly Gln Cys Ile
 245 250 255
 Leu Leu Leu Arg Ile Gln Asn Pro Trp Gly Arg Arg Cys Trp Gln Gly
 260 265 270
 Leu Trp Arg Glu Gly Gly Glu Gly Trp Ser Gln Val Asp Ala Ala Val
 275 280 285
 Ala Ser Glu Leu Leu Ser Gln Leu Gln Glu Gly Glu Phe Trp Val Glu
 290 295 300
 Glu Glu Glu Phe Leu Arg Glu Phe Asp Glu Leu Thr Val Gly Tyr Pro
 305 310 315 320

Val Thr Glu Ala Gly His Leu Gln Ser Leu Tyr Thr Glu Arg Leu Leu
 325 330 335
 Cys His Thr Arg Ala Leu Pro Gly Ala Trp Val Lys Gly Gln Ser Ala
 340 345 350
 Gly Gly Cys Arg Asn Asn Ser Gly Phe Pro Ser Asn Pro Lys Phe Trp
 355 360 365
 Leu Arg Val Ser Glu Pro Ser Glu Val Tyr Ile Ala Val Leu Gln Arg
 370 375 380
 Ser Arg Leu His Ala Ala Asp Trp Ala Gly Arg Ala Arg Ala Leu Val
 385 390 395 400
 Gly Asp Ser His Thr Ser Trp Ser Pro Ala Ser Ile Pro Gly Lys His
 405 410 415
 Tyr Gln Ala Val Gly Leu His Leu Trp Lys Val Glu Lys Arg Arg Val
 420 425 430
 Asn Leu Pro Arg Val Leu Ser Met Pro Pro Val Ala Gly Thr Ala Cys
 435 440 445
 His Ala Tyr Asp Arg Glu Val His Leu Arg Cys Glu Leu Ser Pro Gly
 450 455 460
 Tyr Tyr Leu Ala Val Pro Ser Thr Phe Leu Lys Asp Ala Pro Gly Glu
 465 470 475 480
 Phe Leu Leu Arg Val Phe Ser Thr Gly Arg Val Ser Leu Arg Ala Leu
 485 490 495
 Ala Pro Ala Ala Ser Ala Ser Leu Cys Ile Ser Thr Ala Gly Pro Val
 500 505 510
 Thr Pro Ser Ser Thr Pro Ser Ala Ser Ile Ser Ser Arg Ser Gln Arg
 515 520 525
 Val Glu Gly Ala Arg Thr His Pro His Cys Cys Cys Arg Ser Arg Cys
 530 535 540

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 <211> 2297
 <212> DNA
 <213> Human

<400> 5
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 tctgcactt gtctacgccc ctggcccagt tccgcgagga catcacgtgg aggcggccccc 180
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<211> 517

<212> PRT

<213> Human

<400> 6

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Pro Leu Ala Gln Phe Arg Glu Asp Ile Thr Trp Arg Arg Pro Gln Glu
 35 40 45

Ile Cys Ala Thr Pro Arg Leu Phe Pro Asp Asp Pro Arg Glu Gly Gln
 50 55 60

Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe Leu Cys Ala Cys Ala
 65 70 75 80

Ala Leu Gln Lys Ser Arg His Leu Leu Asp Gln Val Ile Pro Pro Gly
 85 90 95

Gln Pro Ser Trp Ala Asp Gln Glu Tyr Arg Gly Ser Phe Thr Cys Arg
 100 105 110

Ile Trp Gln Phe Gly Arg Trp Val Glu Val Thr Thr Asp Asp Arg Leu
 115 120 125

Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg Cys Gln Arg Glu Asp
130 135 140

Val Phe Trp Leu Pro Leu Leu Glu Lys Val Tyr Ala Lys Val His Gly
145 150 155 160

Ser Tyr Glu His Leu Trp Ala Gly Gln Val Ala Asp Ala Leu Val Asp
165 170 175

Leu Thr Gly Gly Leu Ala Glu Arg Trp Asn Leu Lys Gly Val Ala Gly
180 185 190

Ser Gly Gly Gln Gln Asp Arg Pro Gly Arg Trp Glu His Arg Thr Cys
195 200 205

Arg Gln Leu Leu His Leu Lys Asp Gln Cys Leu Ile Ser Cys Cys Val
210 215 220

Leu Ser Pro Arg Ala Gly Ala Arg Glu Leu Gly Glu Phe His Ala Phe
225 230 235 240

Ile Val Ser Asp Leu Arg Glu Leu Gln Gly Gln Ala Gly Gln Cys Ile
245 250 255

Leu Leu Leu Arg Ile Gln Asn Pro Trp Gly Arg Arg Cys Trp Gln Gly
260 265 270

Leu Trp Arg Glu Gly Gly Glu Trp Ser Gln Val Asp Ala Ala Val
275 280 285

Ala Ser Glu Leu Leu Ser Gln Leu Gln Glu Gly Glu Phe Trp Val Glu
290 295 300

Glu Glu Glu Phe Leu Arg Glu Phe Asp Glu Leu Thr Val Gly Tyr Pro
305 310 315 320

Val Thr Glu Ala Gly His Leu Gln Ser Leu Tyr Thr Glu Arg Leu Leu
325 330 335

Cys His Thr Arg Ala Leu Pro Gly Ala Trp Val Lys Gly Gln Ser Ala
340 345 350

Gly Gly Cys Arg Asn Asn Ser Gly Phe Pro Ser Asn Pro Lys Phe Trp
355 360 365

Leu Arg Val Ser Lys Pro Ser Glu Val Tyr Ile Ala Val Leu Gln Arg
370 375 380

Ser Arg Leu His Ala Ala Asp Trp Ala Gly Arg Ala Arg Ala Leu Val
385 390 395 400

Gly Asp Ser His Thr Ser Trp Ser Pro Ala Ser Ile Pro Gly Lys His
405 410 415

Tyr Gln Ala Val Gly Leu His Leu Trp Lys Val Pro Glu Gly Gly Arg
420 425 430

Ser Gln Asp Ala Pro Pro Leu Leu Gln Glu Pro Leu Leu Ser Cys
435 440 445

Val Pro His Arg Tyr Ala Gln Glu Val Ser Arg Leu Cys Leu Leu Pro
 450 455 460
 Ala Gly Thr Tyr Lys Val Val Pro Ser Thr Tyr Leu Pro Asp Thr Glu
 465 470 475 480
 Gly Ala Phe Thr Val Thr Ile Ala Thr Arg Ile Asp Arg Pro Ser Ile
 485 490 495
 His Ser Gln Glu Met Leu Gly Gln Phe Leu Gln Glu Val Ser Val Met
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 Ala Val Met Lys Thr
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<210> 7
 <211> 2001
 <212> DNA
 <213> Human

<400> 7

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<210> 8
 <211> 513
 <212> PRT
 <213> Human

<400> 8

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Pro Leu Ala Gln Phe Arg Glu Asp Ile Thr Trp Arg Arg Pro Gln Glu
35 40 45

Ile Cys Ala Thr Pro Arg Leu Phe Pro Asp Asp Pro Arg Glu Gly Gln
50 55 60

Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe Leu Cys Ala Cys Ala
65 70 75 80

Ala Leu Gln Lys Ser Arg His Leu Leu Asp Gln Val Ile Pro Pro Gly
85 90 95

Gln Pro Ser Trp Ala Asp Gln Glu Tyr Arg Gly Ser Phe Thr Cys Arg
100 105 110

Ile Trp Gln Phe Gly Arg Trp Val Glu Val Thr Thr Asp Asp Arg Leu
115 120 125

Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg Cys Gln Arg Glu Asp
130 135 140

Val Phe Trp Leu Pro Leu Leu Glu Lys Val Tyr Ala Lys Val His Gly
145 150 155 160

Ser Tyr Glu His Leu Trp Ala Gly Gln Val Ala Asp Ala Leu Val Asp
165 170 175

Leu Thr Gly Gly Leu Ala Glu Arg Trp Asn Leu Lys Gly Val Ala Gly
180 185 190

Ser Gly Gly Gln Gln Asp Arg Pro Gly Arg Trp Glu His Arg Thr Cys
195 200 205

Arg Gln Leu Leu His Leu Lys Asp Gln Cys Leu Ile Ser Cys Cys Val
210 215 220

Leu Ser Pro Arg Ala Gly Ala Arg Glu Leu Gly Glu Phe His Ala Phe
225 230 235 240

Ile Val Ser Asp Leu Arg Glu Leu Gln Gly Gln Ala Gly Gln Cys Ile
245 250 255

Leu Leu Leu Arg Ile Gln Asn Pro Trp Gly Arg Arg Cys Trp Gln Gly
260 265 270

Leu Trp Arg Glu Gly Glu Gly Trp Ser Gln Val Asp Ala Ala Val
275 280 285

Ala Ser Glu Leu Leu Ser Gln Leu Gln Glu Gly Glu Phe Trp Val Glu
290 295 300

Glu Glu Glu Phe Leu Arg Glu Phe Asp Glu Leu Thr Val Gly Tyr Pro
305 310 315 320

Val Thr Glu Ala Gly His Leu Gln Ser Leu Tyr Thr Glu Arg Leu Leu
 325 330 335
 Cys His Thr Arg Ala Leu Pro Gly Ala Trp Val Lys Gly Gln Ser Ala
 340 345 350
 Gly Gly Cys Arg Asn Asn Ser Gly Phe Pro Ser Asn Pro Lys Phe Trp
 355 360 365
 Leu Arg Val Ser Glu Pro Ser Glu Val Tyr Ile Ala Val Leu Gln Arg
 370 375 380
 Ser Arg Leu His Ala Ala Asp Trp Ala Gly Arg Ala Arg Ala Leu Val
 385 390 395 400
 Gly Asp Ser His Thr Ser Trp Ser Pro Ala Ser Ile Pro Gly Lys His
 405 410 415
 Tyr Gln Ala Val Gly Leu His Leu Trp Lys Val Glu Lys Arg Arg Val
 420 425 430
 Asn Leu Pro Arg Val Leu Ser Met Pro Pro Val Ala Gly Thr Ala Cys
 435 440 445
 His Ala Tyr Asp Arg Glu Val His Leu Arg Cys Glu Leu Ser Pro Gly
 450 455 460
 Tyr Tyr Leu Ala Val Pro Ser Thr Phe Leu Lys Asp Ala Pro Gly Glu
 465 470 475 480
 Phe Leu Leu Arg Val Phe Ser Thr Gly Arg Val Ser Leu Arg Ser Gln
 485 490 495
 Arg Val Glu Gly Ala Arg Thr His Pro His Cys Cys Cys Arg Ser Arg
 500 505 510

Cys

<210> 9
 <211> 2204
 <212> DNA
 <213> Human

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 <211> 444
 <212> PRT
 <213> Human

<400> 10
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Ala Ala Phe Pro Ala Ala Asp Ser Ser Leu Phe Cys Asp Leu Ser Thr
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Pro Leu Ala Gln Phe Arg Glu Asp Ile Thr Trp Arg Arg Pro Gln Glu
 35 40 45

Ile Cys Ala Thr Pro Arg Leu Phe Pro Asp Asp Pro Arg Glu Gly Gln
 50 55 60

Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe Leu Cys Ala Cys Ala
 65 70 75 80

Ala Leu Gln Lys Ser Arg His Leu Leu Asp Gln Val Ile Pro Pro Gly
 85 90 95

Gln Pro Ser Trp Ala Asp Gln Glu Tyr Arg Gly Ser Phe Thr Cys Arg
 100 105 110

Ile Trp Gln Phe Gly Arg Trp Val Glu Val Thr Thr Asp Asp Arg Leu
 115 120 125

Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg Cys Gln Arg Glu Asp
 130 135 140

Val Phe Trp Leu Pro Leu Leu Glu Lys Val Tyr Ala Lys Val His Gly
 145 150 155 160

Ser Tyr Glu His Leu Trp Ala Gly Gln Val Ala Asp Ala Leu Val Asp

165	170	175
Leu Thr Gly Gly Leu Ala Glu Arg Trp Asn Leu Lys Gly Val Ala Gly		
180	185	190
Ser Gly Gly Gln Gln Asp Arg Pro Gly Arg Trp Glu His Arg Thr Cys		
195	200	205
Arg Gln Leu Leu His Leu Lys Asp Gln Cys Leu Ile Ser Cys Cys Val		
210	215	220
Leu Ser Pro Arg Ala Gly Ala Arg Glu Leu Gly Glu Phe His Ala Phe		
225	230	235
Ile Val Ser Asp Leu Arg Glu Leu Gln Gly Gln Ala Gly Gln Cys Ile		
245	250	255
Leu Leu Leu Arg Ile Gln Asn Pro Trp Gly Arg Arg Cys Trp Gln Gly		
260	265	270
Leu Trp Arg Glu Gly Glu Gly Trp Ser Gln Val Asp Ala Ala Val		
275	280	285
Ala Ser Glu Leu Leu Ser Gln Leu Gln Glu Gly Glu Phe Trp Val Glu		
290	295	300
Glu Glu Glu Phe Leu Arg Glu Phe Asp Glu Leu Thr Val Gly Tyr Pro		
305	310	315
Val Thr Glu Ala Gly His Leu Gln Ser Leu Tyr Thr Glu Arg Leu Leu		
325	330	335
Cys His Thr Arg Ala Leu Pro Gly Ala Trp Val Lys Gly Gln Ser Ala		
340	345	350
Gly Gly Cys Arg Asn Asn Ser Gly Phe Pro Ser Asn Pro Lys Phe Trp		
355	360	365
Leu Arg Val Ser Lys Pro Ser Glu Val Tyr Ile Ala Val Leu Gln Arg		
370	375	380
Ser Arg Leu His Ala Ala Asp Trp Ala Gly Arg Ala Arg Ala Leu Val		
385	390	395
Gly Asp Ser His Thr Ser Trp Ser Pro Ala Ser Ile Pro Gly Lys His		
405	410	415
Tyr Gln Ala Val Gly Leu His Leu Trp Lys Gly Val Thr Leu Gly Thr		
420	425	430
Thr Leu Phe Pro Val Pro Ser Trp Met Trp Pro Thr		
435	440	

<210> 11
<211> 2516
<212> DNA
<213> Human

<400> 11
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<212> PRT
<213> Human

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Pro Leu Ala Gln Phe Arg Glu Asp Ile Thr Trp Arg Arg Pro Gln Glu
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Ile Cys Ala Thr Pro Arg Leu Phe Pro Asp Asp Pro Arg Glu Gly Gln
50 55 60

Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe Leu Cys Ala Cys Ala

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Gln Pro Ser Trp Ala Asp Gln Glu Tyr Arg Gly Ser Phe Thr Cys Arg			
100		105	110
Ile Trp Gln Phe Gly Arg Trp Val Glu Val Thr Thr Asp Asp Arg Leu			
115		120	125
Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg Cys Gln Arg Glu Asp			
130		135	140
Val Phe Trp Leu Pro Leu Leu Glu Lys Gly Pro Trp Val Leu Arg Ala			
145		150	160
Pro Val Gly Arg Ala Gly Gly Cys Pro Gly Gly Pro Asp Arg Arg			
165		170	175
Pro Gly Arg Lys Met Glu Pro Glu Gly Arg Ser Arg Lys Arg Arg Pro			
180		185	190
Ala Gly Gln Ala Arg Pro Leu Gly Ala Gln Asp Leu Ser Ala Ala Ala			
195		200	205
Pro Pro Glu Gly Pro Val Ser Asp Gln Leu Leu Arg Ala Gln Pro Gln			
210		215	220
Ser Arg Cys Pro Gly Ala Gly Gly Val Pro Cys Leu His Cys Leu Gly			
225		230	235
Pro Ala Gly Ala Pro Gly Ser Gly Gly Pro Val His Pro Ala Ala Ala			
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<211> 139

<212> PRT

<213> Human

<400> 14

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Pro Leu Ala Gln Phe Arg Glu Asp Ile Thr Trp Arg Arg Pro Gln Glu
35 40 45

Ile Cys Ala Thr Pro Arg Leu Phe Pro Asp Asp Pro Arg Glu Gly Gln
50 55 60

Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe Leu Cys Ala Cys Ala
65 70 75 80

Ala Leu Gln Lys Ser Arg His Leu Leu Asp Gln Val Ser Cys Pro Val
85 90 95

Gln Leu Pro Ala Asp Trp Thr Cys Lys Val Gln Pro Val Trp Leu Glu
100 105 110

Phe Pro Cys Leu Pro Ile Ser Cys Arg Leu Arg Val Ser Ser Asp Thr
115 120 125

Ser Pro Asp Ser Ala Thr Trp Gly Ser Trp Lys
130 135

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<211> 1267
<212> DNA
<213> Human

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<212> PRT
<213> Human

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Pro Leu Ala Gln Phe Arg Glu Asp Ile Thr Trp Arg Arg Pro Gln Val
35 40 45

Pro Glu Gly Gly Arg Ser Gln Asp Ala Pro Pro Leu Leu Gln Glu
50 55 60

Pro Leu Leu Ser Cys Val Pro His Arg Tyr Ala Gln Glu Val Ser Arg
65 70 75 80

Leu Cys Leu Leu Pro Ala Gly Thr Tyr Lys Val Val Pro Ser Thr Tyr
85 90 95

Leu Pro Asp Thr Glu Gly Ala Phe Thr Val Thr Ile Ala Thr Arg Ile
100 105 110

Asp Arg Pro Ser Ile His Ser Gln Glu Met Leu Gly Gln Phe Leu Gln
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Glu Val Ser Val Met Ala Val Met Lys Thr
130 135

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<211> 864
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<211> 666
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<213> Mus musculus

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Pro Leu Ala Gln Phe Arg Glu Asp Ile Thr Trp Arg Arg Pro Gln Glu
35 40 45

Ile Cys Ala Thr Pro Gln Leu Phe Pro Asp Asn Pro Trp Glu Gly Gln
50 55 60

Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe Leu Cys Ala Cys Ala
65 70 75 80

Ala Leu Gln Lys Ser Gln His Leu Leu Asp Gln Val Phe Pro Pro Gly
85 90 95

Gln Pro Gly Trp Ser Asp Gln Lys Tyr Gln Gly Phe Phe Thr Cys Arg
100 105 110

Ile Trp Gln Phe Gly His Trp Glu Glu Val Thr Ile Asp Asp Arg Leu
115 120 125

Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg Cys Gln Arg Glu Asp
130 135 140

Val Phe Trp Leu Pro Leu Leu Glu Lys Ala Tyr Ala Lys Val His Gly
145 150 155 160

Ser Tyr Glu His Leu Trp Ala Gly Gln Val Ala Asp Ala Leu Val Asp
165 170 175

Leu Thr Gly Ser Leu Ala Glu Arg Trp Ser Leu Lys Asp Val Thr Lys
180 185 190

Ala Ser Gly Gln Gln Asp Arg Pro Ser Gly Gly Glu His Arg Thr Cys
195 200 205

Arg Gln Leu Leu His Leu Lys Asp Arg Cys Leu Ile Ser Cys Ser Val
210 215 220

Leu Ser Pro Arg Ala Gly Ala Arg Glu Leu Gly Glu Phe His Ala Phe
225 230 235 240

Ile Ile Ser Asp Leu Gln Glu Leu Arg Ser Gln Thr Gly Gln Gly Ile
245 250 255

Leu Leu Leu Arg Ile His Asn Pro Trp Gly Arg Arg Cys Trp Gln Gly
260 265 270

Leu Trp Arg Glu Gly Glu Gly Trp Asn Gln Val Glu Pro Ala Lys
275 280 285

Glu Ser Glu Leu Leu Ala Gln Leu Gln Glu Gly Glu Phe Trp Val Glu
290 295 300

Glu Glu Glu Phe Leu Arg Glu Phe Asp Glu Val Thr Ile Gly Tyr Pro
305 310 315 320

Val Thr Glu Ala Gly His Leu Gln Ser Leu His Thr Glu Arg Val Leu
325 330 335

Cys His Thr Arg Thr Leu Pro Gly Ala Trp Val Thr Gly Gln Ser Ala
340 345 350

Gly Gly Cys Arg Asn Asn Ser Cys Phe Pro Cys Asn Pro Lys Phe Trp
355 360 365

Leu Arg Leu Leu Glu Pro Ser Glu Val Cys Val Ala Val Leu Gln Arg
370 375 380

Pro Arg Arg Arg Leu Val Gly Gln Thr Arg Ala Leu Ala Gly Ala Ser
385 390 395 400

Pro Ala Pro Val Asn Leu Pro Gly Lys Asp Tyr Gln Ala Val Gly Leu
405 410 415

His Ile Trp Lys Val Glu Lys Arg Lys Ile Ser Leu Pro Arg Val Leu
420 425 430

Ser Ala Pro Pro Val Ala Gly Thr Ala Cys His Ala Tyr Asp Arg Glu
435 440 445

Ile His Leu Arg Cys Glu Leu Ser Pro Gly Tyr Tyr Leu Ala Val Pro
450 455 460

Ser Thr Phe Leu Lys Asp Val Pro Gly Gln Phe Leu Leu Arg Val Phe
465 470 475 480

Phe Thr Gly Lys Ile Ser Leu Ser Ala Val Arg Leu Ala Thr Lys Gly
 485 490 495
 Ala Ser Pro Gly Thr Ala Leu Pro Ala Gly Glu Trp Glu Thr Val Gln
 500 505 510
 Leu Gln Gly Cys Trp Arg Ala Gly Gln Thr Ala Gly Gly Ser Arg Asn
 515 520 525
 Phe Ala Ser Tyr Pro Cys Asn Pro Cys Leu Pro Phe Ser Val Pro Glu
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 Gly Ala Gly Pro Arg Tyr Ile Arg Ile Thr Leu Gln Gln His Cys Arg
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 Pro Ala Asp Gly Glu Asn Gln Asp Ala Cys Ser Leu Leu Gln Glu
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 595 600 605
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 610 615 620
 Leu Pro Asp Thr Glu Gly Thr Phe Thr Val Thr Ile Ala Thr Arg Ile
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 <213> Mus musculus

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 <211> 309
 <212> PRT
 <213> Human

<400> 20
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 Pro Ala Ile Lys Leu Gly Phe Tyr Ala Tyr Leu Gly Val Leu Leu Val
 20 25 30

 Leu Gly Leu Leu Asn Ser Leu Ala Leu Trp Val Phe Cys Cys Arg
 35 40 45

 Met Gln Gln Trp Thr Glu Thr Arg Ile Tyr Met Thr Asn Leu Ala Val
 50 55 60

 Ala Asp Leu Cys Leu Leu Cys Thr Leu Pro Phe Val Leu His Ser Leu
 65 70 75 80

 Arg Asp Thr Ser Asp Thr Pro Leu Cys Gln Leu Ser Gln Gly Ile Tyr
 85 90 95

 Leu Thr Asn Arg Tyr Met Ser Ile Ser Leu Val Thr Ala Ile Ala Val
 100 105 110

 Asp Arg Tyr Val Ala Val Arg His Pro Leu Arg Ala Arg Gly Leu Arg
 115 120 125

 Ser Pro Arg Gln Ala Ala Ala Val Cys Ala Val Leu Trp Val Leu Val
 130 135 140

 Ile Gly Ser Leu Val Ala Arg Trp Leu Leu Gly Ile Gln Glu Gly Gly
 145 150 155 160

Phe Cys Phe Arg Ser Thr Arg His Asn Phe Asn Ser Met Arg Phe Pro
165 170 175

Leu Leu Gly Phe Tyr Leu Pro Leu Ala Val Val Val Phe Cys Ser Leu
180 185 190

Lys Val Val Thr Ala Leu Ala Gln Arg Pro Pro Thr Asp Val Gly Gln
195 200 205

Ala Glu Ala Thr Arg Lys Ala Ala Arg Met Val Trp Ala Asn Leu Leu
210 215 220

Val Phe Val Val Cys Phe Leu Pro Leu His Val Gly Leu Thr Val Arg
225 230 235 240

Leu Ala Val Gly Trp Asn Ala Cys Ala Leu Leu Glu Thr Ile Arg Arg
245 250 255

Ala Leu Tyr Ile Thr Ser Lys Leu Ser Asp Ala Asn Cys Cys Leu Asp
260 265 270

Ala Ile Cys Tyr Tyr Tyr Met Ala Lys Glu Phe Gln Glu Ala Ser Ala
275 280 285

Leu Ala Val Ala Pro Arg Ala Lys Ala His Lys Ser Gln Asp Ser Leu
290 295 300

Cys Val Thr Leu Ala
305

<210> 21
<211> 1875
<212> DNA
<213> Human

<400> 21
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gtcaaatgtg ggtgcctcct gcagccgggt gccaggaggg gtggaggggc caccctgggc 120
tttgcggg agccctggct tcccgctcct gggctgacag gtgctgctgc ctctgagccc 180
tccctgtaa gagctgtgtg ctgggtaagg ctgggtggccc tttgggctcc ctgtccagga 240
tttgcgtct ggagggttagg gcttgctggg ctggggactg gaggggaacg tggagctcct 300
tctgcctcct ttccctcccc atgacagcag gcagatccca ggagagaaga gtcaggaga 360
tggaaagagg atctgtccag gggtagacc tcaagggtga ctggagttc tttacggcac 420
ccatgcttc ttgaggagt ttgtgtttg tgggtgtggg gtcggggctc acctccccc 480
acatccctgc ccagaggtagg gcagagtggg ggcagtgcct tgctccccc gtcgcgtctc 540
tgctgacctc cggctccctg tgctgccccca ggaccatgaa tggcacctac aacacctgt 600
gctccagcga cctcacctgg ccccccagcga tcaagctggg cttctacgcc tacttggcg 660
tcctgcttgt gctaggcctg ctgctcaaca gcctggcgct ctgggtgttc tgctgccca 720
tgcaaggatgt gacggagacc cgcatctaca tgaccaacct ggcgggtggcc gacctctgcc 780
tgctgtgcac ttggcccttc gtgctgcact ccctgcgaga cacctcagac acggccgtgt 840
gccagctctc ccagggcattc tacctgacca acaggtacat gagcatcagc ctggtcacgg 900
ccatcgccgt ggaccgcatt gtggccgtgc ggcacccgct gctgtcccgcc gggctgcgg 960
cccccaggca ggctgcggcc gtgtgcgcgg tcctctgggt gctggtcattt ggcctccctgg 1020
tggctcgctg gctcctgggg attcaggagg gcccgttctg cttcaggagc acccgccaca 1080
atttcaactc catggcggttc ccgctgctgg gattctaccc gcccctggcc gtgggtgtct 1140
tctgctccct gaagggtgtg actgcccctgg cccagaggcc acccaccgac gtggggcagg 1200
cagaggccac cgcgaaggct gccccatgg tctggccaa cctcctgggt ttcgtggct 1260
gcttcctgcc cctgcacgtg gggctgacag tgccgcctgc agtgggctgg aacgcctgtg 1320
ccctcctgga gacgatccgt cgcgcctgt acataaccag caagctctca gatgccaact 1380
gctgcctgga cgccatctgc tactactaca tggccaagga gttccaggag gctgtctgcac 1440

tggcgtggc tcccagtgc aaggcccaca aaagccagga ctctctgtgc gtgaccctcg 1500
cctaagaggc gtgctgtggg cgctgtggc caggtctcg 1560
tgccagggga agcttggaa acc agtagcaagg agccccggat cagccctgaa ctcactgtgt 1620
attctcttgg agccttgggt gggcaggac ggcccagta cctgctcttct tggaaagaga 1680
gaggacagg gacaaggggca agaggactga ggccagagca aggccaatgt cagagacccc 1740
cgggatgggg cctcacactt gccacccca gaaccagctc acctggccag agtgggttcc 1800
tgctggccag ggtgcagcct tgatgacacc tgccgctgcc cctcggggct ggaataaaaac 1860
tccccaccca gagtc 1875

<210> 22
<211> 714
<212> PRT
<213> Human

<400> 22
Met Ser Glu Glu Ile Ile Thr Pro Val Tyr Cys Thr Gly Val Ser Ala
1 5 10 15

Gln Val Gln Lys Gln Arg Ala Arg Glu Leu Gly Leu Gly Arg His Glu
20 25 30

Asn Ala Ile Lys Tyr Leu Gly Gln Asp Tyr Glu Gln Leu Arg Val Arg
35 40 45

Cys Leu Gln Ser Gly Thr Leu Phe Arg Asp Glu Ala Phe Pro Pro Val
50 55 60

Pro Gln Ser Leu Gly Tyr Lys Asp Leu Gly Pro Asn Ser Ser Lys Thr
65 70 75 80

Tyr Gly Ile Lys Trp Lys Arg Pro Thr Glu Leu Leu Ser Asn Pro Gln
85 90 95

Phe Ile Val Asp Gly Ala Thr Arg Thr Asp Ile Cys Gln Gly Ala Leu
100 105 110

Gly Asp Cys Trp Leu Leu Ala Ala Ile Ala Ser Leu Thr Leu Asn Asp
115 120 125

Thr Leu Leu His Arg Val Val Pro His Gly Gln Ser Phe Gln Asn Gly
130 135 140

Tyr Ala Gly Ile Phe His Phe Gln Leu Trp Gln Phe Gly Glu Trp Val
145 150 155 160

Asp Val Val Val Asp Asp Leu Leu Pro Ile Lys Asp Gly Lys Leu Val
165 170 175

Phe Val His Ser Ala Glu Gly Asn Glu Phe Trp Ser Ala Leu Leu Glu
180 185 190

Lys Ala Tyr Ala Lys Val Asn Gly Ser Tyr Glu Ala Leu Ser Gly Gly
195 200 205

Ser Thr Ser Glu Gly Phe Glu Asp Phe Thr Gly Gly Val Thr Glu Trp
210 215 220

Tyr Glu Leu Arg Lys Ala Pro Ser Asp Leu Tyr Gln Ile Ile Leu Lys
225 230 235 240

Ala Leu Glu Arg Gly Ser Leu Leu Gly Cys Ser Ile Asp Ile Ser Ser

	245	250	255
Val Leu Asp Met Glu Ala Ile Thr Phe Lys Lys Leu Val Lys Gly His			
260	265	270	
Ala Tyr Ser Val Thr Gly Ala Lys Gln Val Asn Tyr Arg Gly Gln Val			
275	280	285	
Val Ser Leu Ile Arg Met Arg Asn Pro Trp Gly Glu Val Glu Trp Thr			
290	295	300	
Gly Ala Trp Ser Asp Ser Ser Glu Trp Asn Asn Val Asp Pro Tyr			
305	310	315	320
Glu Arg Asp Gln Leu Arg Val Lys Met Glu Asp Gly Glu Phe Trp Met			
325	330	335	
Ser Phe Arg Asp Phe Met Arg Glu Phe Thr Arg Leu Glu Ile Cys Asn			
340	345	350	
Leu Thr Pro Asp Ala Leu Lys Ser Arg Thr Ile Arg Lys Trp Asn Thr			
355	360	365	
Thr Leu Tyr Glu Gly Thr Trp Arg Arg Gly Ser Thr Ala Gly Gly Cys			
370	375	380	
Arg Asn Tyr Pro Ala Thr Phe Trp Val Asn Pro Gln Phe Lys Ile Arg			
385	390	395	400
Leu Asp Glu Thr Asp Asp Pro Asp Asp Tyr Gly Asp Arg Glu Ser Gly			
405	410	415	
Cys Ser Phe Val Leu Ala Leu Met Gln Lys His Arg Arg Arg Glu Arg			
420	425	430	
Arg Phe Gly Arg Asp Met Glu Thr Ile Gly Phe Ala Val Tyr Glu Val			
435	440	445	
Pro Pro Glu Leu Val Gly Gln Pro Ala Val His Leu Lys Arg Asp Phe			
450	455	460	
Phe Leu Ala Asn Ala Ser Arg Ala Arg Ser Glu Gln Phe Ile Asn Leu			
465	470	475	480
Arg Glu Val Ser Thr Arg Phe Arg Leu Pro Pro Gly Glu Tyr Val Val			
485	490	495	
Val Pro Ser Thr Phe Glu Pro Asn Lys Glu Gly Asp Phe Val Leu Arg			
500	505	510	
Phe Phe Ser Glu Lys Ser Ala Gly Thr Val Glu Leu Asp Asp Gln Ile			
515	520	525	
Gln Ala Asn Leu Pro Asp Glu Gln Val Leu Ser Glu Glu Ile Asp			
530	535	540	
Glu Asn Phe Lys Ala Leu Phe Arg Gln Leu Ala Gly Glu Asp Met Glu			
545	550	555	560
Ile Ser Val Lys Glu Leu Arg Thr Ile Leu Asn Arg Ile Ile Ser Lys			
565	570	575	

His Lys Asp Leu Arg Thr Lys Gly Phe Ser Leu Glu Ser Cys Arg Ser
580 585 590

Met Val Asn Leu Met Asp Arg Asp Gly Asn Gly Lys Leu Gly Leu Val
595 600 605

Glu Phe Asn Ile Leu Trp Asn Arg Ile Arg Asn Tyr Leu Ser Ile Phe
610 615 620

Arg Lys Phe Asp Leu Asp Lys Ser Gly Ser Met Ser Ala Tyr Glu Met
625 630 635 640

Arg Met Ala Ile Glu Ser Ala Gly Phe Lys Leu Asn Lys Lys Leu Tyr
645 650 655

Glu Leu Ile Ile Thr Arg Tyr Ser Glu Pro Asp Leu Ala Val Asp Phe
660 665 670

Asp Asn Phe Val Cys Cys Leu Val Arg Leu Glu Thr Met Phe Arg Phe
675 680 685

Phe Lys Thr Leu Asp Thr Asp Leu Asp Gly Val Val Thr Phe Asp Leu
690 695 700

Phe Lys Trp Leu Gln Leu Thr Met Phe Ala
705 710

<210> 23
<211> 700
<212> PRT
<213> Human

<400> 23
Met Ala Gly Ile Ala Ala Lys Leu Ala Lys Asp Arg Glu Ala Ala Glu
1 5 10 15

Gly Leu Gly Ser His Glu Arg Ala Ile Lys Tyr Leu Asn Gln Asp Tyr
20 25 30

Glu Ala Leu Arg Asn Glu Cys Leu Glu Ala Gly Thr Leu Phe Gln Asp
35 40 45

Pro Ser Phe Pro Ala Ile Pro Ser Ala Leu Gly Phe Lys Glu Leu Gly
50 55 60

Pro Tyr Ser Ser Lys Thr Arg Gly Met Arg Trp Lys Arg Pro Thr Glu
65 70 75 80

Ile Cys Ala Asp Pro Gln Phe Ile Ile Gly Gly Ala Thr Arg Thr Asp
85 90 95

Ile Cys Gln Gly Ala Leu Gly Asp Cys Trp Leu Leu Ala Ala Ile Ala
100 105 110

Ser Leu Thr Leu Asn Glu Glu Ile Leu Ala Arg Val Val Pro Leu Asn
115 120 125

Gln Ser Phe Gln Glu Asn Tyr Ala Gly Ile Phe His Phe Gln Phe Trp
130 135 140

Gln Tyr Gly Glu Trp Val Glu Val Val Val Asp Asp Arg Leu Pro Thr
145 150 155 160

Lys Asp Gly Glu Leu Leu Phe Val His Ser Ala Glu Gly Ser Glu Phe
165 170 175

Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Ile Asn Gly Cys Tyr
180 185 190

Glu Ala Leu Ser Gly Gly Ala Thr Thr Glu Gly Phe Glu Asp Phe Thr
195 200 205

Gly Gly Ile Ala Glu Trp Tyr Glu Leu Lys Lys Pro Pro Pro Asn Leu
210 215 220

Phe Lys Ile Ile Gln Lys Ala Leu Gln Lys Gly Ser Leu Leu Gly Cys
225 230 235 240

Ser Ile Asp Ile Thr Ser Ala Ala Asp Ser Glu Ala Ile Thr Phe Gln
245 250 255

Lys Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly Ala Glu Glu Val
260 265 270

Glu Ser Asn Gly Ser Leu Gln Lys Leu Ile Arg Ile Arg Asn Pro Trp
275 280 285

Gly Glu Val Glu Trp Thr Gly Arg Trp Asn Asp Asn Cys Pro Ser Trp
290 295 300

Asn Thr Ile Asp Pro Glu Glu Arg Glu Arg Leu Thr Arg Arg His Glu
305 310 315 320

Asp Gly Glu Phe Trp Met Ser Phe Ser Asp Phe Leu Arg His Tyr Ser
325 330 335

Arg Leu Glu Ile Cys Asn Leu Thr Pro Asp Thr Leu Thr Ser Asp Thr
340 345 350

Tyr Lys Lys Trp Lys Leu Thr Lys Met Asp Gly Asn Trp Arg Arg Gly
355 360 365

Ser Thr Ala Gly Gly Cys Arg Asn Tyr Pro Asn Thr Phe Trp Met Asn
370 375 380

Pro Gln Tyr Leu Ile Lys Leu Glu Glu Asp Glu Asp Glu Glu Asp
385 390 395 400

Gly Glu Ser Gly Cys Thr Phe Leu Val Gly Leu Ile Gln Lys His Arg
405 410 415

Arg Arg Gln Arg Lys Met Gly Glu Asp Met His Thr Ile Gly Phe Gly
420 425 430

Ile Tyr Glu Val Pro Glu Glu Leu Ser Gly Gln Thr Asn Ile His Leu
435 440 445

Ser Lys Asn Phe Phe Leu Thr Asn Arg Ala Arg Glu Arg Ser Asp Thr
450 455 460

Phe Ile Asn Leu Arg Glu Val Leu Asn Arg Phe Lys Leu Pro Pro Gly
 465 470 475 480
 Glu Tyr Ile Leu Val Pro Ser Thr Phe Glu Pro Asn Lys Asp Gly Asp
 485 490 495
 Phe Cys Ile Arg Val Phe Ser Glu Lys Lys Ala Asp Tyr Gln Ala Val
 500 505 510
 Asp Asp Glu Ile Glu Ala Asn Leu Glu Glu Phe Asp Ile Ser Glu Asp
 515 520 525
 Asp Ile Asp Asp Gly Val Arg Arg Leu Phe Ala Gln Leu Ala Gly Glu
 530 535 540
 Asp Ala Glu Ile Ser Ala Phe Glu Leu Gln Thr Ile Leu Arg Arg Val
 545 550 555 560
 Leu Ala Lys Arg Gln Asp Ile Lys Ser Asp Gly Phe Ser Ile Glu Thr
 565 570 575
 Cys Lys Ile Met Val Asp Met Leu Asp Ser Asp Gly Ser Gly Lys Leu
 580 585 590
 Gly Leu Lys Glu Phe Tyr Ile Leu Trp Thr Lys Ile Gln Lys Tyr Gln
 595 600 605
 Lys Ile Tyr Arg Glu Ile Asp Val Asp Arg Ser Gly Thr Met Asn Ser
 610 615 620
 Tyr Glu Met Arg Lys Ala Leu Glu Ala Gly Phe Lys Met Pro Cys
 625 630 635 640
 Gln Leu His Gln Val Ile Val Ala Arg Phe Ala Asp Asp Gln Leu Ile
 645 650 655
 Ile Asp Phe Asp Asn Phe Val Arg Cys Leu Val Arg Leu Glu Thr Leu
 660 665 670
 Phe Lys Ile Phe Lys Gln Leu Asp Pro Glu Asn Thr Gly Thr Ile Glu
 675 680 685
 Leu Asp Leu Ile Ser Trp Leu Cys Phe Ser Val Leu
 690 695 700

<210> 24
 <211> 821
 <212> PRT
 <213> Human

<400> 24
 Met Pro Thr Val Ile Ser Ala Ser Val Ala Pro Arg Thr Ala Ala Glu
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 Pro Arg Ser Pro Gly Pro Val Pro His Pro Ala Gln Ser Lys Ala Thr
 20 25 30
 Glu Ala Gly Gly Gly Asn Pro Ser Gly Ile Tyr Ser Ala Ile Ile Ser
 35 40 45

Arg Asn Phe Pro Ile Ile Gly Val Lys Glu Lys Thr Phe Glu Gln Leu
50 55 60

His Lys Lys Cys Leu Glu Lys Lys Val Leu Tyr Val Asp Pro Glu Phe
65 70 75 80

Pro Pro Asp Glu Thr Ser Leu Phe Tyr Ser Gln Lys Phe Pro Ile Gln
85 90 95

Phe Val Trp Lys Arg Pro Pro Glu Ile Cys Glu Asn Pro Arg Phe Ile
100 105 110

Ile Asp Gly Ala Asn Arg Thr Asp Ile Cys Gln Gly Glu Leu Gly Asp
115 120 125

Cys Trp Phe Leu Ala Ala Ile Ala Cys Leu Thr Leu Asn Gln His Leu
130 135 140

Leu Phe Arg Val Ile Pro His Asp Gln Ser Phe Ile Glu Asn Tyr Ala
145 150 155 160

Gly Ile Phe His Phe Gln Phe Trp Arg Tyr Gly Glu Trp Val Asp Val
165 170 175

Val Ile Asp Asp Cys Leu Pro Thr Tyr Asn Asn Gln Leu Val Phe Thr
180 185 190

Lys Ser Asn His Arg Asn Glu Phe Trp Ser Ala Leu Leu Glu Lys Ala
195 200 205

Tyr Ala Lys Leu His Gly Ser Tyr Glu Ala Leu Lys Gly Gly Asn Thr
210 215 220

Thr Glu Ala Met Glu Asp Phe Thr Gly Gly Val Ala Glu Phe Phe Glu
225 230 235 240

Ile Arg Asp Ala Pro Ser Asp Met Tyr Lys Ile Met Lys Lys Ala Ile
245 250 255

Glu Arg Gly Ser Leu Met Gly Cys Ser Ile Asp Asp Gly Thr Asn Met
260 265 270

Thr Tyr Gly Thr Ser Pro Ser Gly Leu Asn Met Gly Glu Leu Ile Ala
275 280 285

Arg Met Val Arg Asn Met Asp Asn Ser Leu Leu Gln Asp Ser Asp Leu
290 295 300

Asp Pro Arg Gly Ser Asp Glu Arg Pro Thr Arg Thr Ile Ile Pro Val
305 310 315 320

Gln Tyr Glu Thr Arg Met Ala Cys Gly Leu Val Arg Gly His Ala Tyr
325 330 335

Ser Val Thr Gly Leu Asp Glu Val Pro Phe Lys Gly Glu Lys Val Lys
340 345 350

Leu Val Arg Leu Arg Asn Pro Trp Gly Gln Val Glu Trp Asn Gly Ser
355 360 365

Trp Ser Asp Arg Trp Lys Asp Trp Ser Phe Val Asp Lys Asp Glu Lys

370	375	380	
Ala Arg Leu Gln His Gln Val Thr Glu Asp Gly Glu Phe Trp Met Ser			
385	390	395	400
Tyr Glu Asp Phe Ile Tyr His Phe Thr Lys Leu Glu Ile Cys Asn Leu			
405	410	415	
Thr Ala Asp Ala Leu Gln Ser Asp Lys Leu Gln Thr Trp Thr Val Ser			
420	425	430	
Val Asn Glu Gly Arg Trp Val Arg Gly Cys Ser Ala Gly Gly Cys Arg			
435	440	445	
Asn Phe Pro Asp Thr Phe Trp Thr Asn Pro Gln Tyr Arg Leu Lys Leu			
450	455	460	
Leu Glu Glu Asp Asp Pro Asp Ser Glu Val Ile Cys Ser Phe			
465	470	475	480
Leu Val Ala Leu Met Gln Lys Asn Arg Arg Lys Asp Arg Lys Leu Gly			
485	490	495	
Ala Ser Leu Phe Thr Ile Gly Phe Ala Ile Tyr Glu Val Pro Lys Glu			
500	505	510	
Met His Gly Asn Lys Gln His Leu Gln Lys Asp Phe Phe Leu Tyr Asn			
515	520	525	
Ala Ser Lys Ala Arg Ser Lys Thr Tyr Ile Asn Met Arg Glu Val Ser			
530	535	540	
Gln Arg Phe Arg Leu Pro Pro Ser Glu Tyr Val Ile Val Pro Ser Thr			
545	550	555	560
Tyr Glu Pro His Gln Glu Gly Glu Phe Ile Leu Arg Val Phe Ser Glu			
565	570	575	
Lys Arg Asn Leu Ser Glu Glu Val Glu Asn Thr Ile Ser Val Asp Arg			
580	585	590	
Pro Val Lys Lys Lys Thr Lys Pro Ile Ile Phe Val Ser Asp Arg			
595	600	605	
Ala Asn Ser Asn Lys Glu Leu Gly Val Asp Gln Glu Ser Glu Glu Gly			
610	615	620	
Lys Gly Lys Thr Ser Pro Asp Lys Gln Lys Gln Ser Pro Gln Pro Gln			
625	630	635	640
Pro Gly Ser Ser Asp Gln Glu Ser Glu Glu Gln Gln Phe Arg Asn			
645	650	655	
Ile Phe Lys Gln Ile Ala Gly Asp Asp Met Glu Ile Cys Ala Asp Glu			
660	665	670	
Leu Lys Lys Val Leu Asn Thr Val Val Asn Lys His Lys Asp Leu Lys			
675	680	685	
Thr His Gly Phe Thr Leu Glu Ser Cys Arg Ser Met Ile Ala Leu Met			
690	695	700	

Asp Thr Asp Gly Ser Gly Lys Leu Asn Leu Gln Glu Phe His His Leu
705 710 715 720

Trp Asn Lys Ile Lys Ala Trp Gln Lys Ile Phe Lys His Tyr Asp Thr
725 730 735

Asp Gln Ser Gly Thr Ile Asn Ser Tyr Glu Met Arg Asn Ala Val Asn
740 745 750

Asp Ala Gly Phe His Leu Asn Asn Gln Leu Tyr Asp Ile Ile Thr Met
755 760 765

Arg Tyr Ala Asp Lys His Met Asn Ile Asp Phe Asp Ser Phe Ile Cys
770 775 780

Cys Phe Val Arg Leu Glu Gly Met Phe Arg Ala Phe His Ala Phe Asp
785 790 795 800

Lys Asp Gly Asp Gly Ile Ile Lys Leu Asn Val Leu Glu Trp Leu Gln
805 810 815

Leu Thr Met Tyr Ala
820

<210> 25
<211> 639
<212> PRT
<213> Human

<400> 25
Met Phe Ser Cys Val Lys Pro Tyr Glu Asp Gln Asn Tyr Ser Ala Leu
1 5 10 15

Arg Arg Asp Cys Arg Arg Arg Lys Val Leu Phe Glu Asp Pro Leu Phe
20 25 30

Pro Ala Thr Asp Asp Ser Leu Tyr Tyr Lys Gly Thr Pro Gly Pro Ala
35 40 45

Val Arg Arg Lys Arg Pro Lys Gly Ile Cys Glu Asp Pro Arg Leu Phe
50 55 60

Val Asp Gly Ile Ser Ser His Asp Leu His Gln Gly Gln Val Gly Asn
65 70 75 80

Cys Trp Phe Val Ala Ala Cys Ser Ser Leu Ala Ser Arg Glu Ser Leu
85 90 95

Trp Gln Lys Val Ile Pro Asp Trp Lys Glu Gln Glu Trp Asp Pro Glu
100 105 110

Lys Pro Asn Ala Tyr Ala Gly Ile Phe His Phe His Phe Trp Arg Phe
115 120 125

Gly Trp Val Asp Val Val Ile Asp Asp Arg Leu Pro Thr Val Asn Asn
130 135 140

Gln Leu Ile Tyr Cys His Ser Asn Ser Arg Asn Glu Phe Trp Cys Ala
145 150 155 160

Leu Val Glu Lys Ala Tyr Ala Lys Leu Ala Gly Cys Tyr Gln Ala Leu
165 170 175

Asp Gly Gly Asn Thr Ala Asp Ala Leu Val Asp Phe Thr Gly Gly Val
180 185 190

Ser Glu Pro Ile Asp Leu Thr Glu Gly Asp Phe Ala Asn Asp Glu Thr
195 200 205

Lys Arg Asn Gln Leu Phe Glu Arg Met Leu Lys Val His Ser Arg Gly
210 215 220

Gly Leu Ile Ser Ala Ser Ile Lys Ala Val Thr Ala Ala Asp Met Glu
225 230 235 240

Ala Arg Leu Ala Cys Gly Leu Val Lys Gly His Ala Tyr Ala Val Thr
245 250 255

Asp Val Arg Lys Val Arg Leu Gly His Gly Leu Leu Ala Phe Phe Lys
260 265 270

Ser Glu Lys Leu Asp Met Ile Arg Leu Arg Asn Pro Trp Gly Glu Arg
275 280 285

Glu Trp Asn Gly Pro Trp Ser Asp Thr Ser Glu Glu Trp Gln Lys Val
290 295 300

Ser Lys Ser Glu Arg Glu Lys Met Gly Val Thr Val Gln Asp Asp Gly
305 310 315 320

Glu Phe Trp Met Thr Phe Glu Asp Val Cys Arg Tyr Phe Thr Asp Ile
325 330 335

Ile Lys Cys Arg Val Ile Asn Thr Ser His Leu Ser Ile His Lys Thr
340 345 350

Trp Glu Glu Ala Arg Leu His Gly Ala Trp Thr Leu His Glu Asp Pro
355 360 365

Arg Gln Asn Arg Gly Gly Cys Ile Asn His Lys Asp Thr Phe Phe
370 375 380

Gln Asn Pro Gln Tyr Ile Phe Glu Val Lys Lys Pro Glu Asp Glu Val
385 390 395 400

Leu Ile Cys Ile Gln Gln Arg Pro Lys Arg Ser Thr Arg Arg Glu Gly
405 410 415

Lys Gly Glu Asn Leu Ala Ile Gly Phe Asp Ile Tyr Lys Val Glu Glu
420 425 430

Asn Arg Gln Tyr Arg Met His Ser Leu Gln His Lys Ala Ala Ser Ser
435 440 445

Ile Tyr Ile Asn Ser Arg Ser Val Phe Leu Arg Thr Asp Gln Pro Glu
450 455 460

Gly Arg Tyr Val Ile Ile Pro Thr Thr Phe Glu Pro Gly His Thr Gly
465 470 475 480

Glu Phe Leu Leu Arg Val Phe Thr Asp Val Pro Ser Asn Cys Arg Glu
485 490 495

Leu Arg Leu Asp Glu Pro Pro His Thr Cys Trp Ser Ser Leu Cys Gly
500 505 510

Tyr Pro Gln Leu Val Thr Gln Val His Val Leu Gly Ala Ala Gly Leu
515 520 525

Lys Asp Ser Pro Thr Gly Ala Asn Ser Tyr Val Ile Ile Lys Cys Glu
530 535 540

Gly Asp Lys Val Arg Ser Ala Val Gln Lys Gly Thr Ser Thr Pro Glu
545 550 555 560

Tyr Asn Val Lys Gly Ile Phe Tyr Arg Lys Lys Leu Ser Gln Pro Ile
565 570 575

Thr Val Gln Val Trp Asn His Arg Val Leu Lys Asp Glu Phe Leu Gly
580 585 590

Gln Val His Leu Lys Ala Asp Pro Asp Asn Leu Gln Ala Leu His Thr
595 600 605

Leu His Leu Arg Asp Arg Asn Ser Arg Gln Pro Ser Asn Leu Pro Gly
610 615 620

Thr Val Ala Val His Ile Leu Ser Ser Thr Ser Leu Met Ala Val
625 630 635

<210> 26

<211> 641

<212> PRT

<213> Mus musculus

<400> 26

Met Gly Pro Pro Leu Lys Leu Phe Lys Asn Gln Lys Tyr Gln Glu Leu
1 5 10 15

Lys Gln Glu Cys Met Lys Asp Gly Arg Leu Phe Cys Asp Pro Thr Phe
20 25 30

Leu Pro Glu Asn Asp Ser Leu Phe Phe Asn Arg Leu Leu Pro Gly Lys
35 40 45

Val Val Trp Lys Arg Pro Gln Asp Ile Ser Asp Asp Pro His Leu Ile
50 55 60

Val Gly Asn Ile Ser Asn His Gln Leu Ile Gln Gly Arg Leu Gly Asn
65 70 75 80

Lys Ala Met Ile Ser Ala Phe Ser Cys Leu Ala Val Gln Glu Ser His
85 90 95

Trp Thr Lys Ala Ile Pro Asn His Lys Asp Gln Glu Trp Asp Pro Arg
100 105 110

Lys Pro Glu Lys Tyr Ala Gly Ile Phe His Phe Arg Phe Trp His Phe
115 120 125

Gly Glu Trp Thr Glu Val Val Ile Asp Asp Leu Leu Pro Thr Ile Asn
130 135 140

Gly Asp Leu Val Phe Ser Phe Ser Thr Ser Met Asn Glu Phe Trp Asn
145 150 155 160

Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Leu Gly Cys Tyr Glu Ala
165 170 175

Leu Asp Gly Leu Thr Ile Thr Asp Ile Ile Met Asp Phe Thr Gly Thr
180 185 190

Leu Ala Glu Ile Ile Asp Met Gln Lys Gly Arg Tyr Thr Asp Leu Val
195 200 205

Glu Glu Lys Tyr Lys Leu Phe Gly Glu Leu Tyr Lys Thr Phe Thr Lys
210 215 220

Gly Gly Leu Ile Cys Cys Ser Ile Glu Ser Pro Ser Gln Glu Glu Gln
225 230 235 240

Glu Val Glu Thr Asp Trp Gly Leu Leu Lys Gly Tyr Thr Tyr Thr Met
245 250 255

Thr Asp Ile Arg Lys Leu Arg Leu Gly Glu Arg Leu Val Glu Val Phe
260 265 270

Ser Thr Glu Lys Leu Tyr Met Val Arg Leu Arg Asn Pro Leu Gly Arg
275 280 285

Gln Glu Trp Ser Gly Pro Trp Ser Glu Ile Ser Glu Glu Trp Gln Gln
290 295 300

Leu Thr Val Thr Asp Arg Lys Asn Leu Gly Leu Val Met Ser Asp Asp
305 310 315 320

Gly Glu Phe Trp Met Ser Leu Glu Asp Phe Cys His Asn Phe His Lys
325 330 335

Leu Asn Val Cys Arg Asn Val Asn Asn Pro Val Phe Gly Arg Lys Glu
340 345 350

Leu Glu Ser Val Val Gly Cys Trp Thr Val Asp Asp Asp Pro Leu Met
355 360 365

Asn Arg Ser Gly Gly Cys Tyr Asn Asn Arg Asp Thr Phe Leu Gln Asn
370 375 380

Pro Gln Tyr Ile Phe Thr Val Pro Glu Asp Gly His Lys Val Ile Met
385 390 395 400

Ser Leu Gln Gln Lys Asp Leu Arg Thr Tyr Arg Arg Met Gly Arg Pro
405 410 415

Asp Asn Tyr Ile Ile Gly Phe Glu Leu Phe Lys Val Glu Met Asn Arg
420 425 430

Arg Phe Arg Leu His His Leu Tyr Ile Gln Glu Arg Ala Gly Thr Ser
435 440 445

Thr Tyr Ile Asp Thr Arg Thr Val Phe Leu Ser Lys Tyr Leu Lys Lys

450

455

460

Gly Ser Tyr Val Leu Val Pro Thr Met Phe Gln His Gly Arg Thr Ser
465 470 475 480

Glu Phe Leu Leu Arg Ile Phe Ser Glu Val Pro Val Gln Leu Arg Glu
485 490 495

Leu Thr Leu Asp Met Pro Lys Met Ser Cys Trp Asn Leu Ala Arg Gly
500 505 510

Tyr Pro Lys Val Val Thr Gln Ile Thr Val His Ser Ala Glu Gly Leu
515 520 525

Glu Lys Lys Tyr Ala Asn Glu Thr Val Asn Pro Tyr Leu Ile Ile Lys
530 535 540

Cys Gly Lys Glu Glu Val Arg Ser Pro Val Gln Lys Asn Thr Val His
545 550 555 560

Ala Ile Phe Asp Thr Gln Ala Val Phe Tyr Arg Arg Thr Thr Asp Ile
565 570 575

Pro Ile Ile Ile Gln Val Trp Asn Ser Arg Lys Phe Cys Asp Gln Phe
580 585 590

Leu Gly Gln Val Thr Leu Asp Ala Asp Pro Ser Asp Cys Arg Asp Leu
595 600 605

Lys Ser Leu Tyr Leu Arg Lys Lys Gly Gly Pro Thr Ala Lys Val Lys
610 615 620

Gln Gly His Ile Ser Phe Lys Val Ile Ser Ser Asp Asp Leu Thr Glu
625 630 635 640

Leu

<210> 27
<211> 703
<212> PRT
<213> RAT

<400> 27
Met Ala Ala Leu Ala Ala Gly Val Ser Lys Gln Arg Ala Val Ala Glu
1 5 10 15

Gly Leu Gly Ser Asn Gln Asn Ala Val Lys Tyr Leu Gly Gln Asp Phe
20 25 30

Glu Thr Leu Arg Lys Gln Cys Leu Asn Ser Gly Val Leu Phe Lys Asp
35 40 45

Pro Glu Phe Pro Ala Cys Pro Ser Ala Leu Gly Tyr Lys Asp Leu Gly
50 55 60

Pro Gly Ser Pro Asp Thr Gln Gly Ile Val Trp Lys Arg Pro Thr Glu
65 70 75 80

Leu Cys Pro Asn Pro Gln Phe Ile Val Gly Gly Ala Thr Arg Thr Asp

85	90	95	
Ile Arg Gln Gly Gly Leu Gly Asp Cys Trp Leu Leu Ala Ala Ile Ala			
100	105	110	
Ser Leu Thr Leu Asn Glu Lys Leu Leu Tyr Arg Val Leu Pro Arg Asp			
115	120	125	
Gln Ser Phe Gln Lys Asp Tyr Ala Gly Ile Phe His Phe Gln Phe Trp			
130	135	140	
Gln Tyr Gly Glu Trp Val Glu Val Val Ile Asp Asp Arg Leu Pro Thr			
145	150	155	160
Lys Asn Gly Gln Leu Leu Phe Leu His Ser Glu Glu Gly Asn Glu Phe			
165	170	175	
Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Asn Gly Ser Tyr			
180	185	190	
Glu Ala Leu Val Gly Gly Ser Thr Ile Glu Gly Phe Glu Asp Phe Thr			
195	200	205	
Gly Gly Ile Ser Glu Phe Tyr Asp Leu Lys Lys Pro Pro Glu Asn Leu			
210	215	220	
Tyr Tyr Ile Ile Gln Lys Ala Leu Arg Lys Gly Ser Leu Leu Gly Cys			
225	230	235	240
Ser Ile Asp Val Ser Thr Ala Ala Glu Ala Glu Ala Thr Thr Arg Gln			
245	250	255	
Lys Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly Val Glu Glu Val			
260	265	270	
Asn Phe His Gly Arg Pro Glu Lys Leu Ile Arg Leu Arg Asn Pro Trp			
275	280	285	
Gly Glu Val Glu Trp Ser Gly Ala Trp Ser Asp Asn Ala Pro Glu Trp			
290	295	300	
Asn Tyr Ile Asp Pro Arg Arg Lys Glu Glu Leu Asp Lys Lys Ala Glu			
305	310	315	320
Asp Gly Glu Phe Trp Met Ser Phe Ser Asp Phe Leu Lys Gln Tyr Ser			
325	330	335	
Arg Leu Glu Ile Cys Asn Leu Ser Pro Asp Ser Leu Ser Ser Glu Glu			
340	345	350	
Ile His Lys Trp Asn Leu Val Leu Phe Asn Gly Arg Trp Thr Arg Gly			
355	360	365	
Ser Thr Ala Gly Gly Cys Leu Asn Tyr Pro Gly Thr Tyr Trp Thr Asn			
370	375	380	
Pro Gln Phe Lys Ile His Leu Asp Glu Val Asp Glu Asp Gln Glu Glu			
385	390	395	400
Gly Thr Ser Glu Pro Cys Cys Thr Val Leu Leu Gly Leu Met Gln Lys			
405	410	415	

Asn Arg Arg Arg Gln Lys Arg Ile Gly Gln Gly Met Leu Ser Ile Gly
420 425 430

Tyr Ala Val Tyr Gln Ile Pro Lys Glu Leu Glu Ser His Thr Asp Ala
435 440 445

His Leu Gly Arg Asp Phe Phe Leu Gly Arg Gln Pro Ser Thr Cys Ser
450 455 460

Ser Thr Tyr Met Asn Leu Arg Glu Val Ser Ser Arg Val Arg Leu Pro
465 470 475 480

Pro Gly Gln Tyr Leu Val Val Pro Ser Thr Phe Glu Pro Phe Lys Asp
485 490 495

Gly Asp Phe Cys Leu Arg Val Phe Ser Glu Lys Lys Ala Lys Ala Leu
500 505 510

Glu Ile Gly Asp Thr Val Ser Gly His Pro His Glu Pro His Pro Arg
515 520 525

Asp Met Asp Glu Glu Asp Glu His Val Arg Ser Leu Phe Glu Glu Phe
530 535 540

Val Gly Lys Asp Ser Glu Ile Ser Ala Asn Gln Leu Lys Arg Val Leu
545 550 555 560

Asn Glu Val Leu Ser Lys Arg Thr Asp Met Lys Phe Asp Gly Phe Asn
565 570 575

Ile Asn Thr Cys Arg Glu Met Ile Ser Leu Leu Asp Ser Asp Gly Thr
580 585 590

Gly Ser Leu Gly Pro Met Glu Phe Lys Thr Leu Trp Leu Lys Ile Arg
595 600 605

Thr Tyr Leu Glu Ile Phe Gln Glu Met Asp His Asn His Val Gly Thr
610 615 620

Ile Glu Ala His Glu Met Arg Thr Ala Leu Lys Lys Ala Gly Phe Thr
625 630 635 640

Leu Asn Asn Gln Val Gln Gln Thr Ile Ala Met Arg Tyr Ala Cys Ser
645 650 655

Lys Leu Gly Val Asp Phe Asn Gly Phe Val Ala Cys Met Ile Arg Leu
660 665 670

Glu Thr Leu Phe Lys Leu Phe Arg Leu Leu Asp Lys Asp Gln Asn Gly
675 680 685

Ile Val Gln Leu Ser Leu Ala Glu Trp Leu Cys Cys Val Leu Val
690 695 700

<210> 28
<211> 690
<212> PRT
<213> Human

<400> 28
Met Pro Tyr Leu Tyr Arg Ala Pro Gly Pro Gln Ala His Pro Val Pro
1 5 10 15
Lys Asp Ala Arg Ile Thr His Ser Ser Gly Gln Ser Phe Glu Gln Met
20 25 30
Arg Gln Glu Cys Leu Gln Arg Gly Thr Leu Phe Glu Asp Ala Asp Phe
35 40 45
Pro Ala Ser Asn Ser Ser Leu Phe Tyr Ser Glu Arg Pro Gln Ile Pro
50 55 60
Phe Val Trp Lys Arg Pro Gly Glu Ile Val Lys Asn Pro Glu Phe Ile
65 70 75 80
Leu Gly Gly Ala Thr Arg Thr Asp Ile Cys Gln Gly Glu Leu Gly Asp
85 90 95
Cys Trp Leu Leu Ala Ala Ile Ala Ser Leu Thr Leu Asn Gln Lys Ala
100 105 110
Leu Ala Arg Val Ile Pro Gln Asp Gln Ser Phe Gly Pro Gly Tyr Ala
115 120 125
Gly Ile Phe His Phe Gln Phe Trp Gln His Ser Glu Trp Leu Asp Val
130 135 140
Val Ile Asp Asp Arg Leu Pro Thr Phe Arg Asp Arg Leu Val Phe Leu
145 150 155 160
His Ser Ala Asp His Asn Glu Phe Trp Ser Ala Leu Leu Glu Lys Ala
165 170 175
Tyr Ala Lys Leu Asn Gly Ser Tyr Glu Ala Leu Lys Gly Gly Ser Ala
180 185 190
Ile Glu Ala Met Glu Asp Phe Thr Gly Gly Val Ala Glu Thr Phe Gln
195 200 205
Thr Lys Glu Ala Pro Glu Asn Phe Tyr Glu Ile Leu Glu Lys Ala Leu
210 215 220
Lys Arg Gly Ser Leu Leu Gly Cys Phe Ile Asp Thr Arg Ser Ala Ala
225 230 235 240
Glu Ser Glu Ala Arg Thr Pro Phe Gly Leu Ile Lys Gly His Ala Tyr
245 250 255
Ser Val Thr Gly Ile Asp Gln Val Ser Phe Arg Gly Gln Arg Ile Glu
260 265 270
Leu Ile Arg Ile Arg Asn Pro Trp Gly Gln Val Glu Trp Asn Gly Ser
275 280 285
Trp Ser Asp Ser Ser Pro Glu Trp Arg Ser Val Gly Pro Ala Glu Gln
290 295 300
Lys Arg Leu Cys His Thr Ala Leu Asp Asp Gly Glu Phe Trp Met Ala
305 310 315 320

Phe Lys Asp Phe Lys Ala His Phe Asp Lys Val Glu Ile Cys Asn Leu
325 330 335

Thr Pro Asp Ala Leu Glu Glu Asp Ala Ile His Lys Trp Glu Val Thr
340 345 350

Val His Gln Gly Ser Trp Val Arg Gly Ser Thr Ala Gly Gly Cys Arg
355 360 365

Asn Phe Leu Asp Thr Phe Trp Thr Asn Pro Gln Ile Lys Leu Ser Leu
370 375 380

Thr Glu Lys Asp Glu Gly Gln Glu Glu Cys Ser Phe Leu Val Ala Leu
385 390 395 400

Met Gln Lys Asp Arg Arg Lys Leu Lys Arg Phe Gly Ala Asn Val Leu
405 410 415

Thr Ile Gly Tyr Ala Ile Tyr Glu Cys Pro Asp Lys Asp Glu His Leu
420 425 430

Asn Lys Asp Phe Phe Arg Tyr His Ala Ser Arg Ala Arg Ser Lys Thr
435 440 445

Phe Ile Asn Leu Arg Glu Val Ser Asp Arg Phe Lys Leu Pro Pro Gly
450 455 460

Glu Tyr Ile Leu Ile Pro Ser Thr Phe Glu Pro His Gln Glu Ala Asp
465 470 475 480

Phe Cys Leu Arg Ile Phe Ser Glu Lys Lys Ala Ile Thr Arg Asp Met
485 490 495

Asp Gly Asn Val Asp Ile Asp Leu Pro Glu Pro Pro Lys Pro Thr Pro
500 505 510

Pro Asp Gln Glu Thr Glu Glu Gln Arg Phe Arg Ala Leu Phe Glu
515 520 525

Gln Val Ala Gly Glu Asp Met Glu Val Thr Ala Glu Glu Leu Glu Tyr
530 535 540

Val Leu Asn Ala Val Leu Gln Lys Lys Asp Ile Lys Phe Lys Lys
545 550 555 560

Leu Ser Leu Ile Ser Cys Lys Asn Ile Ile Ser Leu Met Asp Thr Ser
565 570 575

Gly Asn Gly Lys Leu Glu Phe Asp Glu Phe Lys Val Phe Trp Asp Lys
580 585 590

Leu Lys Gln Trp Ile Asn Leu Phe Leu Arg Phe Asp Ala Asp Lys Ser
595 600 605

Gly Thr Met Ser Thr Tyr Glu Leu Arg Thr Ala Leu Lys Ala Ala Gly
610 615 620

Phe Gln Leu Ser Ser His Leu Leu Gln Leu Ile Val Leu Arg Tyr Ala
625 630 635 640

Asp Glu Glu Leu Gln Leu Asp Phe Asp Asp Phe Leu Asn Cys Leu Val

645

650

655

Arg Leu Glu Asn Ala Ser Arg Val Phe Gln Ala Leu Ser Thr Lys Asn
660 665 670

Lys Glu Phe Ile His Leu Asn Ile Asn Glu Phe Ile His Leu Thr Met
675 680 685

Asn Ile
690

<210> 29
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 29
tctcagatgt gggtagggct gtgatgggg 29

<210> 30
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 30
aataaa 6